## Case 3323

## *Rana ocellata* Linnaeus, 1758 (currently *Leptodactylus ocellatus*; Amphibia, Anura): proposed conservation of usage of the specific name by the designation of a neotype

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**Abstract.** The purpose of this application, under Article 75.6 of the Code, is to conserve the usage of the specific name of *Rana ocellata* Linnaeus, 1758 for a species of leptodactylid frog from South America by the designation of a neotype. Prevailing usage of the name is threatened by the identity of the type specimen which is a different species than that which is currently known as *Leptodactylus ocellatus*. It is proposed that all name-bearing types be set aside and a neotype designated in accord with prevailing usage.

**Keywords.** Nomenclature; taxonomy; Amphibia; Anura; *Leptodactylus*; *Leptodactylus ocellatus*; frog; South America.

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1. The nominal species *Rana ocellata* was established by Linnaeus in 1758 (p. 211). Kitchell (1994) translated the original description as: '*ocellata* 9. Frog with ocellate ears and stubby feet. *Brown. jam.* 466. *t.* 41. *f.* 4. The largest, compressed, mottled frog. Lives in America. At the ears there is an occellate [sic] spot on each side. Front feet four-toed and split; rear feet five-toed, subpalmate'. The description itself does not permit unequivocal association with any currently recognized species of frog. The figure cited by Linnaeus is rather stylized and does not represent any species of *Leptodactylus*. The illustration is certainly based on a species of *Rana* as stated by Peters (1872, p. 199).

2. Peters (1872, pp. 197–201) summarized the usage of the name *Rana ocellata* and examined a specimen purported to be the holotype ('originalexemplar') from the Museum Adolphi Friderici. Herpetologists accepted the nomenclatural status of *Rana ocellata* Linnaeus, 1758 as discussed by Peters (1872) in his influential paper. Peters (1872, p. 200) stated that the specimen was the specimen used by Linnaeus in his description, although he believed that the later more complete description

(Linnaeus, 1764, p. 39) included an error regarding the relative lengths of the toes. Peters did not provide a detailed description of the type other than some measurements and indicated that the specimen was faded and compared extremely well with a specimen (number 3319) in the Berlin Museum. The purported holotype Peters examined was transferred in 1801 from the Museum Adolphi Friderici to the Swedish Museum of Natural History (NRM) in Stockholm and was catalogued as NRM 150 with the following information: 'det. C. Linnaeus / 1764. 1766. Leg: Ex. Coll. Adolphi Friderici Field No: KVA-LIN'. Peters concluded that the type of *Rana ocellata* represented a valid species then recognized in the genus *Cystignathus* (currently *Leptodactylus*) and provided a synonymy. The specimen Peters examined is still extant and seems to be in as good condition as it was when he studied it. The name *Rana ocellata* was established with a description and reference to an illustration (see para. 1 above). However, Peters (1872, p. 200) stated: 'Da es mir so ganz unerwiesen und unwahrscheinlich schien, dass Linné's *Rana ocellata* auf die vorstehende Art zu beziehen sei, wandte ich mich an meinem Freund, Hrn. Professor S. Lovén in Stockholm mit der Anfrage, ob das Originalexemplar zu der aus der Sammlung des Königs Adolph Friederich von Linné beschreibenen *Rana ocellata* vorhanden sei'. We interpret this statement to mean that Peters believed that Linnaeus had a single specimen of the species he described as *Rana ocellata*. Under Article 74.6 of the Code 'if it is considered subsequently that the original description was based on more than one specimen, the first author to have published before 2000 the assumption that the species-group taxon was based upon a single type specimen is deemed to have designated that specimen as the lectotype'. Therefore, designation of the lectotype may be credited to Peters (1872, p. 200). Several years ago Dr Ivan Sazima examined and photographed this specimen and realized that it was not the species that is currently recognized as *Leptodactylus ocellatus* and informally made this information known to his herpetological colleagues. An image of the type specimen is posted on the web at 'http://linnaeus.nrm.se/zool/herp/images/H00150.jpg'. The lead author (Heyer) recently examined this specimen and confirmed what Dr Sazima had discovered, that the type of *Rana ocellata* Linnaeus, 1758 is conspecific with the species currently known as *Leptodactylus bolivianus* Boulenger, 1898. At the time that Peters examined the type of *Rana ocellata* herpetologists thought that there was a single rather variable species that included the two species now recognized as *Leptodactylus bolivianus* and *L. ocellatus*.

3. The situation is further complicated by the fact that *Leptodactylus bolivianus* and *L. ocellatus* are each recognized as consisting of two or more species. Neither species has been revised based on evaluation of material throughout their extensive geographic ranges. However, both species have been used extensively as experimental laboratory animals, especially in Latin America. Heyer is compiling a bibliography for the genus *Leptodactylus* and has found at least 1,000 publications in which *L. ocellatus* is cited and more than 200 publications where *L. bolivianus* is cited. We are currently revising the taxon understood as *L. ocellatus*. Our preliminary findings indicate that there are both reproductive and molecular differences that represent more than one species, but that the morphologies of these biological taxa are very similar and may not be distinguishable. Applying the name *L. ocellatus* to the species currently known as *L. bolivianus* and resurrecting a synonym of the species currently known as *L. ocellatus* would cause great confusion. Therefore, to provide stability for

the name *L. ocellatus*, we propose that the lectotype of *Rana ocellata* Linnaeus, 1758 be set aside, and a neotype be designated in accord with currently accepted usage of the name, in accordance with Article 75.6 of the Code. Designation of a neotype will fix the identity of the nominal species *L. ocellatus* and enable resolution of the names for other cryptic species currently included in the name *L. ocellatus*. The proposed neotype (MNRJ 30733) was collected from Vale dos Agriões, Teresópolis, 22° 25' S, 42° 58'W, approx. 900 m above sea level, Rio de Janeiro, Brazil on 18 September 1999 by Ulisses Caramaschi, H. de Niemeyer and D. F. de Moraes Jr. The specimen is in the Museu Nacional, Rio de Janeiro, Brazil. There is a viable population at this locality and a DNA sample is available for the specimen. At this time, mtDNA sequence data for the specimen are available at GenBank accession number AY669856.

6. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power to set aside all previous type fixations for the nominal species *ocellata* Linnaeus, 1758, as published in the binomen *Rana ocellata*, and to designate specimen MNRJ 30733 in the Museu Nacional, Rio de Janeiro, Brazil, mtDNA sequence data GenBank accession number AY669856, from Vale dos Agriões, Teresópolis, 22° 25' S, 42° 58' W, approx. 900 m above sea level, Rio de Janeiro, Brazil, as the neotype;

(2) to place on the Official List of Specific Names in Zoology the name *ocellata* Linnaeus, 1758, as published in the binomen *Rana ocellata* and as defined by the neotype designated in (1) above.

## References

**Kitchell Jr., K.** 1994. Translation and annotation of the amphibian and reptile section of Systema Naturae X. Pp. 3–39 *in* Kitchell Jr., K. & Dundee, H.A., *A trilogy on the herpetology of Linnaeus's Systema Naturae X*. Smithsonian Herpetological Information Service, no. 100. 61 pp. Smithsonian Institution, Washington, D.C.

**Linnaeus, C.** 1758. *Systema Naturae* (Ed. 10), vol. 1. 824 pp. Salvii, Holmiae.

**Linnaeus, C.** 1764. *Museum S:ae R:ae M:tis Adolphi Friderici Regis Svecorum, Gothorum, Vandalorumque &c. &c. &c. in quo Animalia rariora imprimis & exotica: Aves, Amphibia, Piscis describuntur*, vol. 2. Prodromus. Pp. 110. Holmiae.

**Peters, W.** 1872. Über die von Spix in Brasilien gesammelten Batrachier des Königl. Naturalienkabinets zu München. *Monatsberichte der Königlichen Preussische Akademie der Wissenschaften Berlin*, **1872**: 196–227.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).